

Your Public Lands

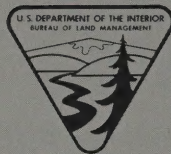
Summer 1982

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Public Lands - An Energy Frontier



**U.S. DEPARTMENT OF THE
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BUREAU OF LAND MANAGEMENT**

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. administration.

YOUR PUBLIC LANDS, the official publication of the Bureau of Land Management, U.S. Department of the Interior, is issued Spring, Summer, Autumn and Winter.

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Publication Designer: **Gayle Daskalakis**

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Subscription price, \$9.50 per year, domestic; \$11.90 per year, foreign mailing; \$2.50 per single copy domestic and \$3.15 per single copy for foreign mailing.

The printing of this publication was approved by the Office of Management and Budget, Jan. 20, 1978.

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Prints of photographs appearing herein may be obtained for publication by writing to the Editor, *Your Public Lands*, Office of Public Affairs, Bureau of Land Management, U.S. Department of the Interior, 18th and C Streets, N.W., Washington, D.C. 20240.

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Number 3

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Our Nation's Energy Resources

This issue of *Your Public Lands* is devoted to discussion of the vast wealth of energy resources found on our Nation's public lands and how we in the Bureau of Land Management (BLM) are managing these resources for the benefit of all Americans.

When I came to Washington in May of 1981, it was because I believed I could help achieve President Reagan's "New Beginning." In BLM this means that we must develop our vast energy, mineral, and other natural resources in a balanced economic and environmental manner, while rebalancing the relationship between the Federal and State governments.

In the past year, we have streamlined the Outer Continental Shelf oil and gas leasing process to meet Secretary Watt's goal of offering over one billion acres for lease within the next five years. This will give industry a broader choice in determining exploration strategies, and continue the excellent environmental record of the OCS program. Last year Federal offshore oil and gas leases produced 283 million barrels of oil and 4.8 trillion cubic feet of natural gas. I'm proud to say that we have protected that environment.

Secretary Watt's recent transfer of all OCS activities to the Minerals Management Services has taken us out of the offshore oil business, but we can be justifiably proud of our record, both financially and environmentally. Just since fiscal year 1975, we earned for the Treasury over 28.2 billion dollars as a result of offshore leasing, bonus payments, rents and royalties. And, this has been a tremendously successful program in terms of environmental safety.

After a ten-year moratorium on Federal coal leasing, we have completed the sale of two coal leases this year, the largest sale of Federal coal leases in American history in Wyoming and Montana. Months of close cooperation between the Federal government and the States of Wyoming and Montana in what Secretary Watt termed "... a fine example of our 'good neighbor' policy ..." led to the success of this sale.

We are developing options for an oil shale leasing program, which will allow market forces to determine the timing of commercial oil shale development on the public land. The market will guide decisions about when and how much shale oil will be produced. Industry can then

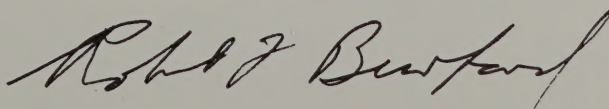
provide the government with information on where the best possibilities exist for leasing. As this information comes in, we will probably extend the prototype leasing program to cover other minerals recovered as oil shale by-products. At the same time, we are studying the possibility of a permanent leasing program in Colorado, Utah and Wyoming.

BLM is the second biggest income source in the Federal government, right behind the Internal Revenue Service. When you're number two, you're supposed to try harder, and we do. I intend to follow an aggressive leasing policy and with good reason. Just look at the energy resources found on the public land:

- 148 billion tons of coal—34 percent of the national total;
 - 1.7 billion barrels of proven reserves of crude oil;
 - 9.8 trillion cubic feet of proven reserves of natural gas;
 - 1.6 trillion barrels of in-place shale oil—80 percent of the national total; 600 billion barrels of this is recoverable by today's technology;
 - 65 percent of the nation's known geothermal resources;
 - 90 percent of the nation's known tar sands deposits; and
 - 35 percent of the national uranium reserves;
- and these are only the *known* available energy resources.

We Americans hold the keys to a great energy storehouse. We need to begin developing these resources in an orderly manner to alleviate not only our dependence on foreign sources of energy, but also a severe economic plight caused, to a great extent, by our needs to purchase so much oil from abroad.

In order to achieve our goals, I intend to manage the natural resources on the public lands in a more balanced manner. To do this, I will concentrate on bringing the human being back into the total environmental picture. In addition, I want to assure people living in the impacted areas of energy development that BLM will work with the State and local governments as we proceed toward a "New Beginning."



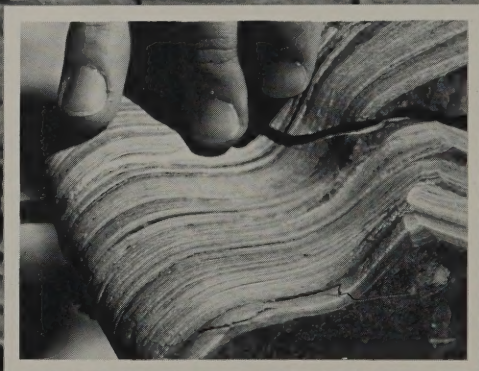
Robert F. Burford

Director of the Bureau of Land Management

Oil Shale

An Infant Synthetic Fuels Industry On Hold

By Bill Tarpenning



We live in a society powered to a great degree by oil. Its future availability is our most pressing energy problem. No other fuel source will power most of our automobiles, trucks, planes and ships this century. Yet, with limited domestic reserves, and uncertain foreign supplies, we must develop alternative sources of liquid fuels.

One such alternative—shale oil—could provide significant quantities this century and stretch its benefits far into the 21st century. The public lands of Wyoming, Colorado and Utah are warehouses of oil bearing shale. Technology exists for recovering oil from shale on a large scale production basis, compatible with our existing fuels such as heating oil, gasoline and jet aircraft fuel.

Americans learned about oil shale from the Ute Indians who called it "the rock that burns". Pioneers crossing the Rocky Mountains greased their wagon wheels with this viscous substance. By the middle of the 19th century a small industry had grown up refining kerosene from shale oil.

The discovery of liquid petroleum at Titusville, Pennsylvania in 1859 halted the infant shale oil industry for a time.

The internal combustion engine, and its use in Henry Ford's Model T's caused an oil rush and the forming of more than 200 companies to exploit the shale oil-rich Green River Formation of Colorado, Utah and Wyoming. Boom and bust was again the story as liquid petroleum was found in east Texas.

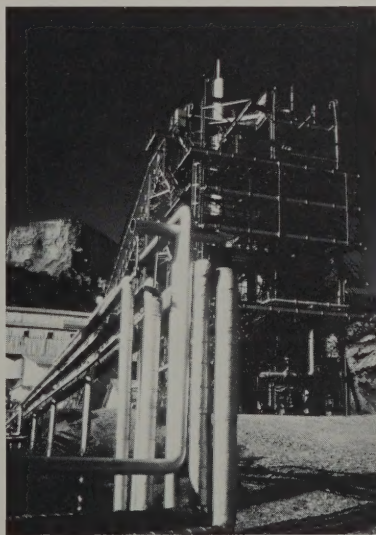
The global conflict that was World War II with its massive consumption of petroleum, caused concern in Congress for our supplies of oil. They passed the Synthetic Liquid Fuels Act to foster the development of an alternative, in which shale oil was to play a significant role. Following WWII, the discovery of gigantic supplies of liquid

petroleum in the Middle East again eroded the potential market for shale oil.

Dwindling U.S. oil production, accompanied by the uncertain political situation in the Middle East in the 1970's, again turned the eyes and dollars of the energy industry to the Rocky Mountains and their vast deposits of oil shale.

The focus of the "off again, on again" oil shale interest is an organic compound called kerogen. Formed from deposits that settled to the bottom of prehistoric lakes about fifty million years ago, kerogen is a rubbery substance chemically bonded to the rock. It will not flow, but when heated to 900 °F, the kerogen yields a premium synthetic crude oil resembling conventional petroleum with a low sulphur content.

There are two major methods used for processing of the rock to get it to yield its oil. Above-ground processing is just that. Rock is mined and carried to a retort above-ground where it is heated and the oil extracted. The in-situ process retorts the shale while still underground.



(Left) This wall is a repository of oil bearing shale. (Small inset left) Closeup of "the rock that burns." The dark veins in this shale rock contain the oil which can be processed out. (Above and right) Oil shale rock is mined and carried to this aboveground retort where, when heated, it yields its oil.

The American people are co-owners of about 80% of this oil shale, as it is found mostly on public lands administered by the Bureau of Land Management. Approximately 600 billion barrels of shale oil are estimated recoverable by existing technologies.

In 1971, Interior Secretary Rogers C.B. Morton announced a prototype leasing program to stimulate the development of oil shale technology by private industry, and develop environmental safeguards and management expertise for oil shale leasing and supervision.

In 1974, six tracts were offered for lease and four oil shale leases were issued under a prototype program. Development of the two leases in Colorado is proceeding, using modified in-situ technology. However, one Colorado tract would use open pit mining and surface retorting if offsite disposal for the residue could be obtained. The two tracts leased in Utah have not been developed because of legal conflicts over land ownership and mining claims. To date, there has been no shale oil production from any of these Federal leases.

Although there is no demonstrated technology for commercial production of oil shale, several experimental projects have been developed including the Anvil Points oil shale facility near Rifle, Colorado. There are oil shale projects in Brazil and Australia, and China is looking into oil shale development.

With the international price of crude oil dropping and the glut of crude on the market, there does not appear to be a rush to establish production of oil from shale in large quantities. When that time comes, however, the Bureau of Land Management will be ready. Even now, it is formulating new policies for additional prototype leases and tracts could be offered as early as 1984 under a permanent program.

In the meantime, isn't it nice to know that you own all that oil?

Bill Tarpenning is Acting Chief, BLM's Branch of Communications and Publications Services, Washington, D.C.

Coal Leasing

Decisions and Impacts

By Bruce P. Van Haveren

The demand for energy mineral resources is projected to increase as traditional energy sources, such as oil and gas, become limiting or prohibitively expensive. Any exploration or development of new energy sources will undoubtedly involve environmental conflicts. Coal is one such energy mineral which promises to play an important role in the Nation's future energy supply mix. Coal will be a key factor in the U.S. energy policy in the next 30 years. Coal is forecasted to be an interim energy resource, serving to replace dwindling oil and gas supplies and tide us over until more sustaining energy sources, such as solar and nuclear, are more fully developed and accepted by society.

The Federal government owns 66 percent of the coal resources in the western U.S. Of this amount, 41 percent of the acreage is managed by either the Bureau of Land Management or the Forest Service. Thus, the Bureau of Land Management has a vested interest in the post-mining land use of a large portion of the lands overlying the Federal coal estate.

Policies governing Federal coal leasing were found to be inadequate in a 1970 BLM study which concluded that Federal coal production was declining even though the amount of coal under lease was increasing. The Secretary of the Interior imposed an informal moratorium on leasing in May 1971,

followed by a formal moratorium in February 1973, at which time he announced his decision to establish a new coal leasing policy. The new coal leasing program was altered by statute and halted by litigation.

Debut Of A New Federal Coal Management Program

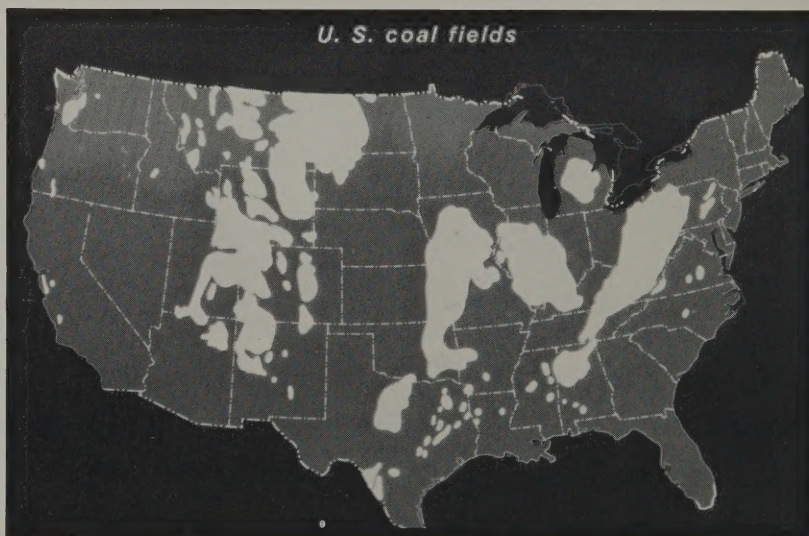
The Secretary of the Interior's new coal management program has been implemented. The goals of the new program are to (a) employ land-use planning and effective enforcement of environmental laws to assure that Federal coal is committed

to production and produced in an environmentally acceptable manner, (b) assure that sufficient quantities of Federal coal are produced to help meet the objectives of a national energy plan, (c) assure that Federal coal is produced in an economically efficient manner with a fair economic return to the United States, and to (d) consult and cooperate with the State governments in planning the leasing and development of Federal coal.

Initially, potential coal leasing areas are reviewed to determine which lands are unsuitable for all or certain types of coal mining. Next, BLM delineates, selects, and ranks lease tracts for each regional coal leasing scenario. BLM also is responsible for preparing the regional coal environmental impact statements.

The Land Manager's Role

The BLM land manager, having responsibilities for potential coal leasing areas, must ultimately decide whether or not to lease coal. He or she must determine, before issuing the lease, that coal resource development is the best use of the land for that particular place and time, and that impacts upon competing resources can be mitigated. The general land-use plan covering the lease area provides a general guide for determining the post-mine land use, but the land manager must be assured, before the lease is issued, that the post-mine and land-use objectives can be met.



Post Mining Land-Use Decision

For Federal coal lands where the surface is privately owned this is a default decision, since BLM cannot dictate a post-mine use of land in private ownership. But where both the surface and coal are Federally owned, the land manager has the option of choosing a better use of the land by altering the mix of resource capabilities during reclamation. This choice may, in fact, be the wiser. According to the National Research Council, it may be impossible to duplicate pre-mine conditions within any reasonable time-frame. If the manager opts for a new resource management mix, then specific reclamation goals must be communicated to the appropriate regulatory agency and to the developer.

Reclamation

BLM, through its coal program and in cooperation with the U.S. Bureau of Reclamation, has conducted over 40 resource and reclamation potential studies in seven western States. These studies gathered data and interpretations on soil, water, and revegetation potential for the land manager to assist in making coal leasing decisions.

The results of these studies have been used extensively as supporting material for the preparation of the regional coal environmental impact statements recently completed by BLM. These reports have been used as guidelines for developing leasing stipulations. Most areas in the West can be successfully reclaimed, given

enough time and attention to sound reclamation practices. The responsibility for determining reclaimability was assumed by the Office of Surface Mining in the Department of the Interior.

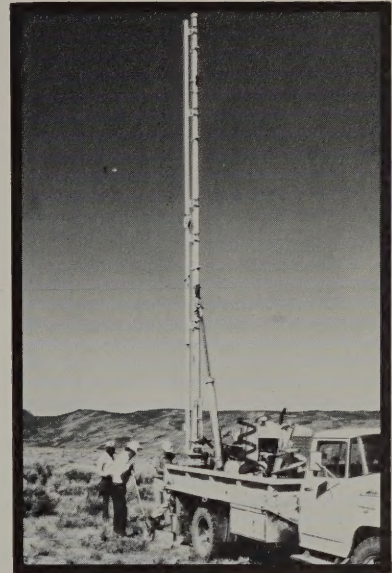
Coal Hydrology

The BLM and the U.S. Geological Survey (USGS) cooperatively embarked on a coal hydrology program in 1974. This program was designed to increase the knowledge of hydrologic processes in the Federal coal regions and to build a capability for predicting potential hydrologic impacts from coal development.

Coal mining in the West could have severe impacts on hydrologic systems and upon the people who depend on those systems for their water supplies. Mining could upset watershed equilibrium by increasing the intensity and frequency of flooding and could damage groundwater systems used as a source of water. The majority of petitions against BLM leasing decisions have been based on hydrologic concerns.

To help answer hydrologic questions, BLM has funded the USGS to conduct studies in the Fort Union, Powder River, Green River-Hams Fork, Denver-Raton Mesa, San Juan River, Western Interior, and Appalachian Federal coal regions.

The studies are performed in large river basins containing Federal coal. They are designed to provide baseline hydrologic data. Area hydrologic investigations are conducted



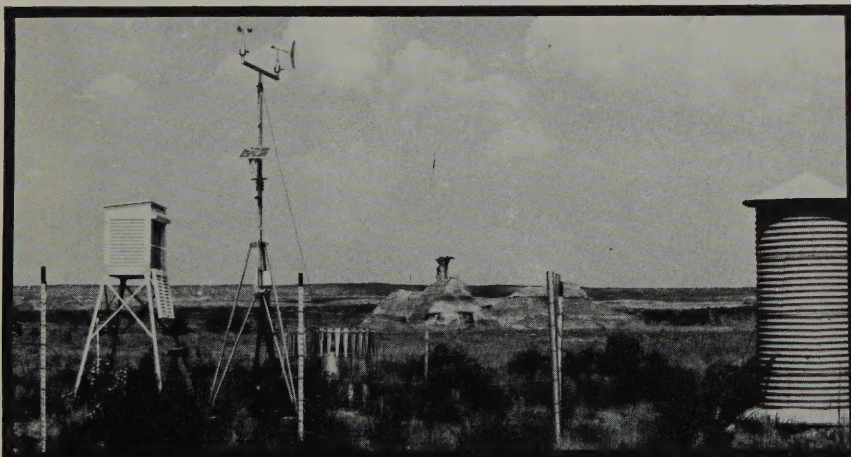
BLM gathers data on geology and soils from potential coal leasing sites.

on smaller basins (25 to 130 square kilometers) where BLM feels that some coal leasing will most likely occur. Hydrologic surveys are performed on specific coal lease tracts or on study areas having a high leasing potential. Site-specific studies may also be conducted in connection with special studies of resource conflicts involving water resources and lands suitable for coal mining. Topical hydrologic studies were initiated in some areas to answer specific questions about hydrologic process-response functions and to improve our general knowledge of the hydrology of the coal regions.

Through its energy and minerals program, the Bureau of Land Management has collected, since 1974, a wealth of technical information about potential resource impacts from coal leasing. As a result of these technical investigations, BLM managers now have supporting data upon which leasing decisions can be made.

Bruce Van Haveren is a Hydrologist and the Coal Coordinator for the Denver Service Center of the Bureau of Land Management, Denver, Colorado

Baseline hydrologic data are being collected in all Federal coal regions.





AMERICA'S ARCTIC LIFELINE

Story and photos by
William J. Robertson

In the farthest reaches of the United States, a narrow thread of land winds from Alaska's heartland through the rugged Brooks Range to the vast open spaces of Alaska's North Slope. Often the subject of bitter disputes of land ownership, life styles and uses, this stretch of Federal land, called the utility corridor, provides a vital link to Alaska's vast energy resources.

At its northern end lies the Prudhoe Bay oil field and, far to the west, huge coal deposits that could supply this nation for centuries. Both offshore and onshore exploration continues to reveal more fields of gas and oil. Many of America's strategic minerals are to be found throughout the area. These and other resources, when tapped for use, will pass through the utility corridor.

The strip of land is far more than a passageway for energy resources.

Recreation, forest products, minerals, range, watershed, commercial uses and wildlife each play a part in the tug-of-war for the land. Environmental concerns, present land ownerships, mining interests, traditional use by Native cultures and historical values all have their effect.

The land was withdrawn by Public Land Order 5150 in 1971 for a transportation and utility corridor across Federal lands linking State-owned lands 60 miles south of Prudhoe Bay to State-owned lands 35 miles north of Fairbanks. About 336 miles long, the corridor varies from six to 24 miles in width and contains about 3.5 million acres. Surrounded on both sides by lands withdrawn by Congress for National Parks and Wildlife Refuges, the corridor presents the only access through the entire 600 miles east to the west sweep of Alaska's Brooks Mountain Range.

Within the corridor, the four-foot diameter, 800-mile-long, trans-Alaska pipeline meanders on its way to the tidewater terminal at Valdez. Pumping 1.5 million barrels of oil per day, the line has five pump stations and related housing facilities within the corridor's boundaries. A large diameter pipeline to bring natural gas and associated liquid products is proposed to be constructed by 1986. It too, would lie within the corridor. Two nearly abandoned gold mining camps are also within the area. A State-owned and maintained road runs the corridor's entire length. In adjacent areas, mineral deposits of tungsten, copper, lead, zinc, and uranium are buried. If developed, access from the corridor will have to be provided.

Proposed at one time as a cultural park, the corridor is undeniably beautiful. Traveling the graveled Dalton Highway, built for the con-

struction and maintenance of the oil pipeline, you enter the corridor at Washington Creek, just north of Fairbanks. The land is heavily wooded over gently undulating hills. Occasionally, rocky spires or "granite tors" punctuate the landscape and provide a challenge to climbing enthusiasts. Farther north, an inclined bridge spans the awesome Yukon River and is truly the gateway to the Arctic. Open to commercial traffic since 1975, the road north is opened to the general public only in the summer. North lie the approaches to the Brooks Range which divides the North Slope of Alaska from its Interior. The corridor and the road are both swallowed up in the immensity of towering peaks, vast snow fields and endless skies. Geologic patterns of rock and soil tell of thrusting upheavals in eons past. Tumbled and rolling in a jig-saw of never ending patterns, the cliffs drop precipitously to the narrow valley of Atigun Pass. All along the way, names such as Old Man, Bonanza Creek, Prospect, Gobbler's Knob, and Coldfoot stand out on the map and only make one wonder of their

origin. Crossing the continental divide is passage into another world. The valley of the corridor, stretching to the Arctic Ocean, is flat, treeless—a barren wasteland, or so it would seem. But wildlife is everywhere and the frozen tundra abounds in plant species adapted to this rugged environment. Over your shoulder is the omnipresent oil pipeline, beautiful in its own way, carrying the life-blood of the Nation.

Land north of the Brooks Range is a storehouse of energy which supplies this lifeline corridor. The Prudhoe Bay oil field now supplies nearly 10% of the nation's energy. The proposed gas line will provide still more energy. Additional oil and gas fields are now being tapped and with the National Petroleum Reserve in Alaska, newly opened to exploration, the U.S. outlook for petroleum reserves continues to improve.

Coal is the real nest-egg. It is estimated that over one trillion tons of bituminous and sub-bituminous coal reserves exist on Alaska's North Slope. This is enough to supply the U.S. energy needs for

300 years.

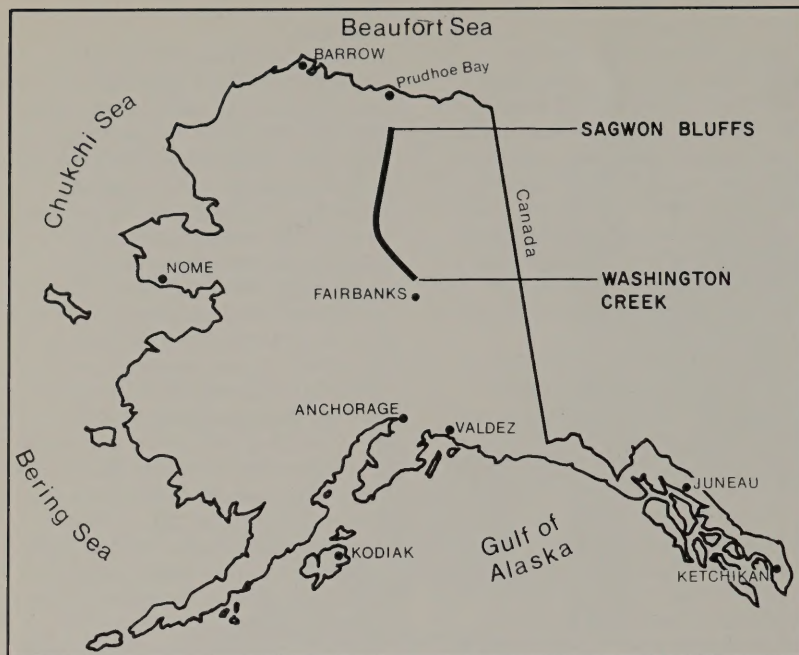
Energy reserves are one thing, getting them out is yet another. Even hardened Alaska sourdoughs describe the North Slope climate as "terrible." The permanently frozen subsoil supports a thin layer of vegetation that thaws in the summer to a spongy, water-soaked mat interspersed with innumerable small water-filled pot holes. These provide a breeding ground for the hordes of mosquitoes that rise in clouds whenever the wind is calm—which is not often. Over the arctic ice cap, there is almost always a wind blowing that is cold and moist in the summer. Overcast skies or low, dense fog are common. In winter, the five months without sunlight added to the intense cold, wind and blowing snow make the North Slope an inhospitable place. Workers are seldom without heavy, down clothing, winter or summer. They face constant breakdown of equipment. Permanent roads, except in areas of long term activity, are nonexistent. Travel is by air and subject to the hazards of low visibility, darkness and severe weather.

Heavy equipment is moved in



(Left) The valley of the Corridor abounds in plant species adapted to this rugged environment.

(Right) The trans-Alaska pipeline takes a zig-zag pattern through the corridor for earthquake protection and thermal expansion and contraction.



winter over temporary snowroads constructed of snow and ice or by use of low-ground pressure, all-terrain vehicles. All surface activities are by permit and closely monitored by BLM to ensure surface protection while allowing industrial development.

Development activity on Alaska's North Slope is orderly, but somewhat frantic.

It was recognized early in the development of the Prudhoe Bay oil field that the corridor would highlight a number of conflicting interests. It was a narrow piece of Alaska real estate abounding in natural resources—land dedicated to transportation and utility uses and land subject to many public and economic demands. Recognizing this potential for conflict between varying land uses, the Bureau of Land Management, in 1972 embarked on an extensive land use planning effort for the corridor. The plan was to establish a rational method of land use, providing for multiple use, when possible, and maintaining high standards of environmental quality.

After several drafts, and review by numerous State and Federal groups, the document was pub-



Grizzly bears make their home in the Utility Corridor along with wolf, caribou, red fox and other wildlife.

lished March 1, 1980. One significant feature of the plan is a provision for service facilities along the Dalton Highway. Even if the road is open only to industrial use, the need will always exist for service facilities. These could be located randomly along the corridor, depending on projected use. An alternative was to cluster facilities for all uses at a few planned locations or nodes. Once areas were selected, public interest was high to provide commercial service facilities.

The BLM will soon issue the first two long-term leases for development in the corridor. Other activities are expected to follow. Population is growing in the service areas. An application for a school site has been submitted for the area in the Yukon River. A large landing site has been proposed for the same general area.

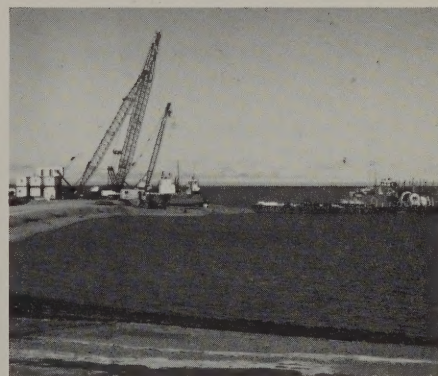
To the jaundiced eye of the city-dweller, development is commonplace, but in a land where only five years ago there was none, the present activity is like a modern day gold rush—only this rush is being accomplished in an orderly manner. Because the corridor has become a rallying point for political interests, industrial use, recreation use and Native interests, close cooperation between all interests has been a vital element in planning.

Development and use of the corridor land will doubtlessly escalate in the years to come. New energy discoveries will be made, critical minerals will need to be extracted; and, the public will have to be served in their needs from the public lands. A land use plan is only the first step in providing these needs. The next step is to implement and carry out objectives and goals identified in the plan. The test of a suitable plan is its ability to provide the desired effects in a timely and efficient manner and at the same time protect the natural values of the land involved. It is not an easy task and not all will be satisfied completely. But failure to plan and to grow with the activity in the corridor can only cause a piecemeal result. The very resource that is to be protected will suffer from hesitancy and failure to act in a timely manner. BLM will continue to direct activities on the public lands in the



(Above) The pipeline is set on vertical support modules to protect it from permafrost in this inhospitable environment.

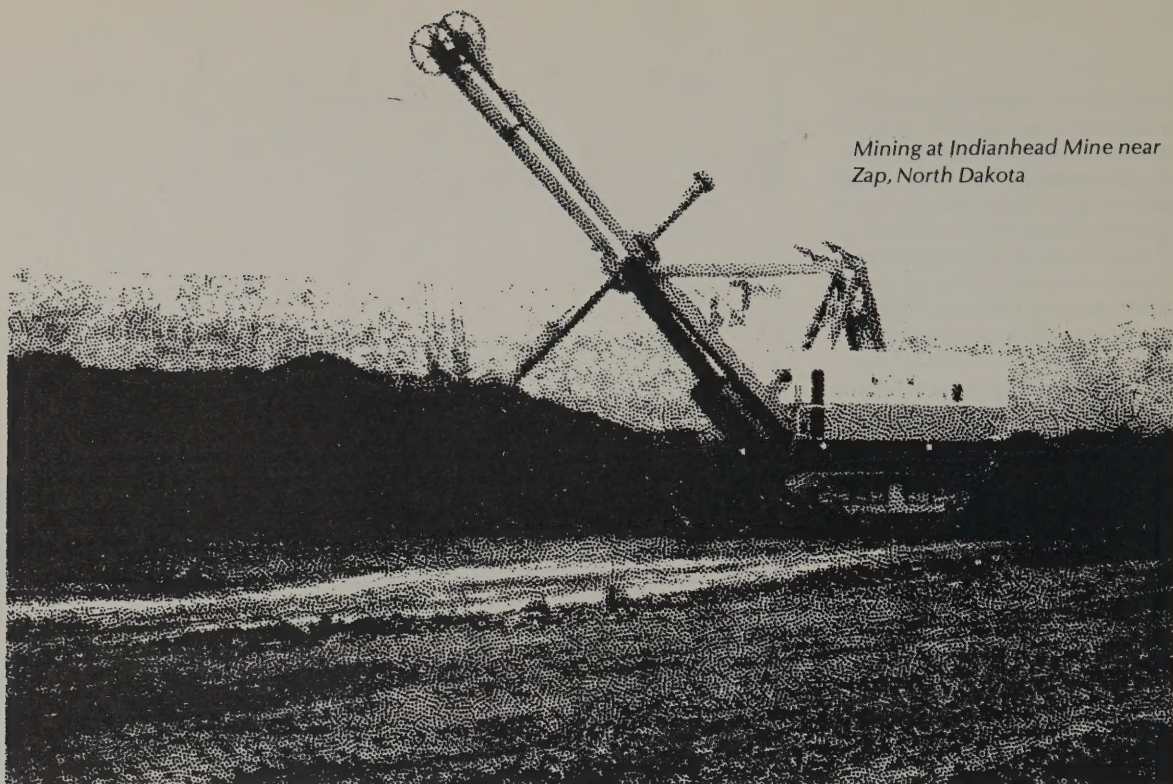
(Below) Construction activity at Prudhoe Bay oil field which lies at the northern end of the Utility Corridor.



corridor using the land use plan as a guide. The planning system is flexible and allows the land manager to use discretion on activity decisions. As situations change, the plan must be able to change also.

The utility corridor will continue to be the lifeline for the Nation now and for the foreseeable future. The challenge to BLM land managers is to provide for this and to use wisely the land management concepts and mandates that this Nation now demands of its Federal landlords.

William Robertson is Chief of Public Affairs in BLM's Fairbanks, Alaska District



Mining at Indianhead Mine near Zap, North Dakota

Fort Union Coal Region

By Jackie Olson



Early homesteaders near Zap, North Dakota, probably never dreamed that coal mined near their farms would one day provide electricity to homes as far away as Illinois.

Today, coal from the Fort Union coal region of eastern Montana and west-central North Dakota supplies power to parts of the mid-west. Nine mines and seven power plants operate now, and BLM's Fort Union Regional Coal Team is planning for future development by offering Federal coal for lease next year.

Fort Union is one of 12 Federally-identified coal regions in the United States, and holds more than 11 percent of the recoverable coal in the West. The region contains more than 100 beds of lignite ranging from a few inches to more than forty feet thick.

The region, named for a fur trading fort near the confluence of the Yellowstone and Missouri Rivers, has a rich and colorful history. Fort Union, built in 1828, served as headquarters for a branch of John Jacob Astor's American Fur Company. The fort was used as a base to crush competition from other companies. In violation of Federal law, a small still was smuggled into the fort to turn corn into liquor. The liquor was used to bribe the Indians from selling their furs to the rival Hudson Bay Company. However, when the government discovered the still, Fort Commander, Kenneth McKenzie, lost his job and the company almost lost its trading license.

Farmers and ranchers settled the area after the fur traders left. One of the more famous squatters was

Theodore Roosevelt. Although he never held title to any land, Roosevelt operated about 5,000 head of cattle on two ranches along the Little Missouri River. After losing most of his cattle during the harsh winters of 1885-86, Roosevelt gave up frontier living and returned to New York.

"Empire Builder" James J. Hill was a leading homesteading promoter. Hill, who controlled three of the five railroad lines in the area, offered potential homesteaders space in railroad cars from St. Paul to eastern Montana for as little as \$22.50. The space included enough room for the homesteader's family, all their belongings, seed, and livestock.

Most of the land in North Dakota is still productive farmland, while much of the land in Montana is used as range for livestock. However, the

area is now becoming known for its energy resources: oil, gas and coal.

The Bureau of Land Management organized Federal, State and local officials into the Fort Union Regional Coal Team in 1980. The team has several responsibilities: to seek public comment regarding coal development; to examine the impacts of development on the environment; and to offer for lease an economically and environmentally acceptable amount of Federal coal.

Based on public comments and interest from industry, the coal team has focused on 24 tracts in the Fort Union region. More than two billion tons of Federal coal are contained in the 11 tracts in Montana and 13 tracts in North Dakota. A leasing target of 800 million to 1.2 billion tons has been established for the region.

Energy development will cause some changes in the predominantly rural nature of the region. Agricultural impacts will vary from site to site. Small amounts of land will be necessary for road and facility construction. This will result in reduced crop production or grazing land. Energy development may also affect water quality and quantity.

The region is home to many species of wildlife, including ante-

lope, mule deer, golden eagle, prairie falcon, migratory birds, and fish. Energy development may affect wildlife and wildlife habitat. BLM is firmly committed to minimizing the impact on wildlife.

Some deterioration of air quality is to be expected with energy development, but companies are required to meet Federal and State air quality regulations.

Reclamation of mined land is another area of concern that must be addressed. Experts agree that the technology exists to restore land to its original productivity, but some areas can be difficult to reclaim. Before any company gains permission to mine, it must post a bond to cover reclamation costs. The bond is not released until successful reclamation can be verified.

Economic changes and trade-offs always accompany energy development. The job market expands, wages go up, and new businesses are created. But communities must also face and plan for changing housing needs, and new needs for service, including education and other changes inherent in a growing population.

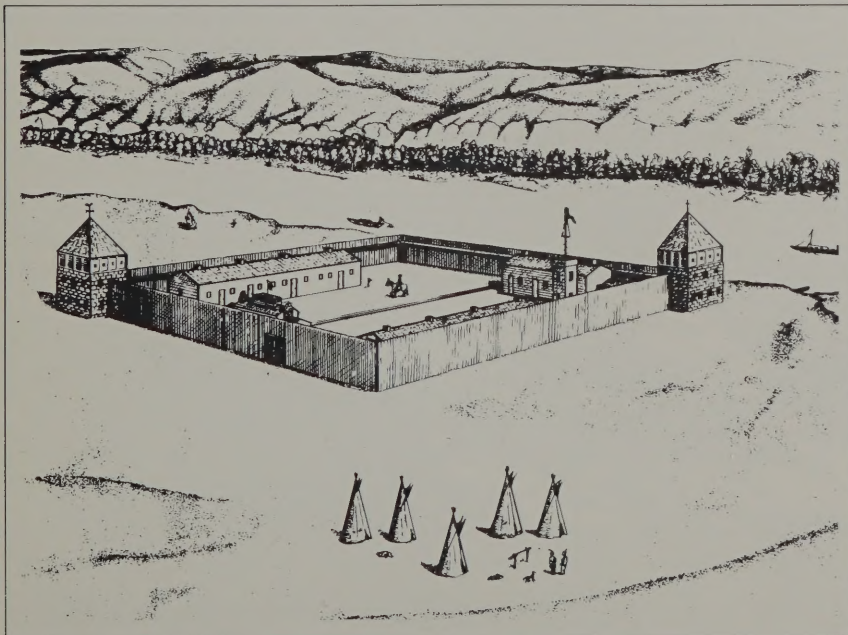
BLM people will be meeting with the local residents this summer to discuss these potential problems and decide, together,

what is needed. Their comments will be incorporated into the final environmental impact statement. The coal team will then make a recommendation for leasing, based on the final EIS, and submit its recommendations to Secretary of the Interior James Watt. After consultation with State governors, the Secretary will make a final selection of tracts to be offered and adopt a schedule for the competitive sale of leases. Leasing is scheduled to begin in June, 1983.

Secretary Watt has called the West an "energy basket" that may be vulnerable to a "crash program to develop coal and other resources." As a safeguard, Watt has called for "an orderly, systematic program of energy development that will protect the environment." Planning now for the development of Federal coal will ensure that the Nation's future energy needs will be met and, at the same time, protect the environment of the West.

Jackie Olson is a Public Affairs Specialist in BLM's Montana State Office.

Drawing of old Fort Union



Rights-of-Way

Meeting the Nation's Needs

By Jack Reed

Our Nation's population center, shifting westward into the mountain States and southwestern sunbelt, is increasingly in need of more energy sources to fuel its electrical power generating requirements, including the heating and cooling of its homes, schools, factories and businesses. Many of the contemplated electric generating sources can best be built on public lands administered by the Bureau of Land Management (BLM).

Approximately 374 million acres of public lands are scattered over the western States and Alaska in such places as isolated canyons, arid deserts, broad treeless valleys, and bare mountain tops.

Energy companies are looking to the public lands to provide rights-of-way as well as sites for energy facilities. These would include haul roads and railroads for surface traffic, overhead electrical power transmission lines, and below surface use for pipelines transporting oil, gas, and coal slurries. Other energy sources on public lands to be eventually tapped include; geothermal steam, oil shale and tar sands, and even such seemingly exotic sources as solar power and wind energy.

Each year, hundreds of right-of-way applications are processed by BLM. Even if no BLM lands are involved, BLM issues the right-of-way grant when the right-of-way crosses lands of two or more Federal agencies at any given time.

Right-of-way applications are for a wide variety of proposals such as oil shale production, coal gasification, oil or natural gas pipelines, electric transmission lines, coal-fired electric generating stations and coal slurry pipelines.

Major energy projects sometimes involve conflicts with national parks or wilderness areas because of air quality, endangered species, competition for water in the arid West and, other controversial or sensitive issues.

Because of heavy socioeconomic impacts, State and local governments frequently need to be involved in a right-of-way project. Many requests for permits or rights-of-way involve land in more than one State.

Under requirements of the National Environmental Policy Act of 1969 (NEPA), Government actions that will significantly affect the environment require a study of the proposal in an environmental im-

pact statement which examines the proposed actions, lists alternatives with probable consequences, and details possible mitigating measures. Such statements are issued in draft form for public review. Views of citizens, special interest groups, and local and State governments are then incorporated into a Final Environmental Impact Statement which contributes to a decision whether to grant or deny the applicant's request.

Within the past two years improvements have been made which have shortened the permitting process by as much as 50 percent. Further proposed changes include using new techniques or management procedures which would further reduce processing time. Even a few weeks during BLM's role in an energy project can mean large dollar savings to the customer.

Jack Reed is a Public Information Specialist in BLM's Washington, D.C. Office of Public Affairs

The Gates of Hell

By Barbara Gibbons

The Geysers Steam Field, described by its discoverer in 1847 as the Gates of Hell, is located 70 miles north of San Francisco and is the largest commercial geothermal development in the world.

Actually, the field is misnamed as it has no true geysers. Rather, steam escapes from natural fissures in the rock formation called fumaroles, at a regular rate. Geysers spurt water and steam for variable times, at intervals.

The Geysers Steam Field hosted popular health spas until the early 1920s, when the first attempt was made to harness the steam to generate electricity. Although tapping of the steam was successful, the turbines and pipes could not withstand the abrasion and corrosion caused by particles and impurities in the steam. Additionally, geothermal energy did not prove to be as economical as the hydroelectric plants in use at the time, and the project was abandoned.

The first successful well was drilled in 1955, and in 1960 Pacific Gas and Electric Company (PG&E) constructed the first geothermal power plant in the United States for the Magma and Thermal Power Companies.

Ten years and four PG&E power plants later, Congress passed the Geothermal Steam Act authorizing the Federal government to lease geothermal resources. In 1973, prior to the Bureau of Land Management's first lease sale, the Geysers development surpassed those in



Steam escapes from natural fissures in the rock formation called fumaroles.

Italy as the largest commercial geothermal development in the world.

BLM conducted its first lease sale on Federal lands at the Geysers in 1974. At the time, 12 leases totaling nearly 9,000 acres were granted at an average bid of over \$600 per acre. Two leases in 1977 and nine leases in 1978 bring the total to 23 leases on nearly 16,000 acres. The average bid in the 1978 sale was just over \$5,000 per acre. All told, the Geysers has brought bid receipts of better than \$22 million into the Federal Treasury.

Of the 200 wells drilled at the Geysers since 1955, 55 are on Federal leases and 43 of them have proven commercial. PG&E estimates each well costs \$1 million to drill and around 15 wells are needed to produce the steam for a 100 Mw generating plant.

PG&E has 15 power generating units operating at the Geysers with a total generating capacity of 894 Mw, enough power to replace eight million barrels of oil per year. One PG&E unit in Lake County generates 135 Mw making it the largest geothermal power plant in the world. Stanford Research Institute predicts that the total generating capacity at the Geysers by the year 2000 will be 5600 Mw, enough power to service more than five million residential customers.

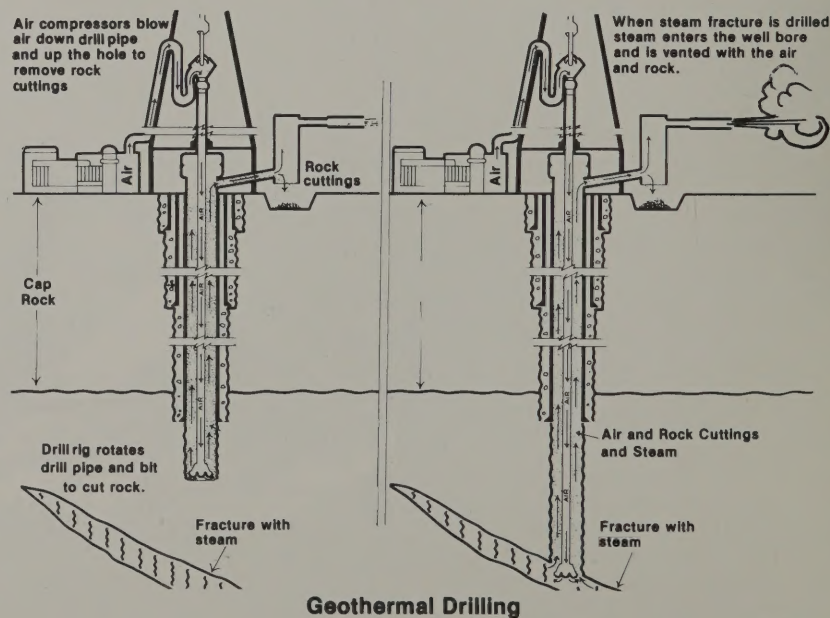
Power generated from the Geysers is channeled into an integrated electric system for northern and central California and provides about 4% of the system's total electrical requirements.

Two agencies in the Department of the Interior share responsibility for managing the geothermal development activities at the Geysers. BLM is responsible for pre-lease work. This includes identifying potential lease areas, preparing environmental assessments, and deciding on whether or not to lease. The Minerals Management Service (MMS) (formerly the Conservation Division on the U.S. Geological Survey) then divides the leasable lands into lease units and assesses their values. BLM, in consultation with MMS, has the option to reject bids based on these value assessments. Once lands are leased, MMS administers field development and exploration activities, monitoring

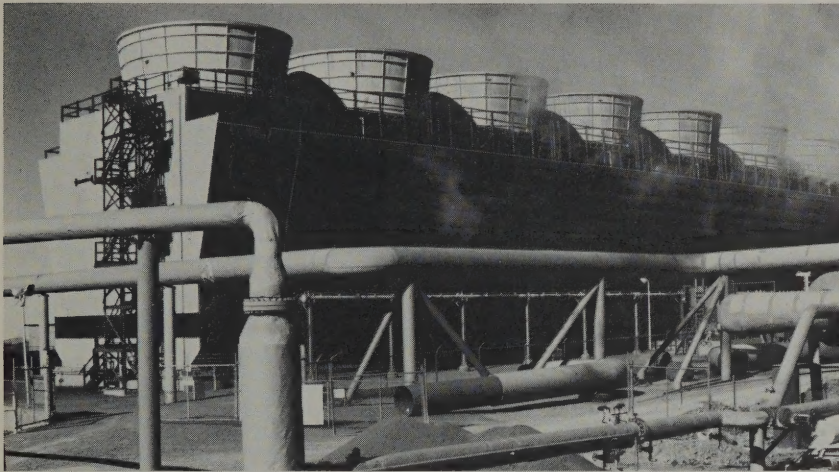


Eric Johnson

Drilling rig. It is estimated that each well costs \$1 million to drill.



By 1973, the Geysers development surpassed those in Italy as the largest commercial geothermal development in the world. (Top) The cooling towers and pipelines for the power plant. (Bottom) Loops in the pipelines allow for expansion and contraction of pipes carrying steam.



lease stipulations and environmental impacts.

Both Interior Department agencies work closely with the California Energy Commission to prepare joint environmental assessments for proposed power plant sitings on Federal land.

A major controversy concerning geothermal development at the Geysers deals with Federal mineral

reserve lands. Much of the land surface was given over to private ownership under the Stock Raising Homestead Act of 1916. The mineral rights to these lands was retained by the Federal government. As nine of the 23 existing Federal leases in the Geysers are on mineral reserve lands the courts were called upon to decide ownership of the geothermal resource. In 1977, the Federal Court of Appeals ruled that mineral rights included geothermal resources.

Air pollution too has been a problem in that hydrogen sulfide (H_2S), a colorless gas with the odor of rotten eggs, is emitted into the atmosphere. New units using the "Stretford" process are being tested and are said to remove 95% of the hydrogen sulfide.

Endangered wildlife such as the peregrine falcon are considered, and their habitat is removed from leasing. Rare plants such as the Socartes Mine Jewelflower are also protected, often by fencing.

More than 700 prehistoric sites have been identified in the area, and no development is authorized until a developer can guarantee compliance with the National Historic Preservation Act of 1966, and Executive Orders covering protection of cultural resources.

Landslides from natural causes are common in the area. Careful

selection of drill sites and routing of access roads help avoid acceleration of landslides from geothermal development.

In addition to the receipts from bids discussed earlier, the Federal government collects rental fees and royalties from geothermal development. Annual rentals are not less than \$1 per acre and a royalty of 10 to 15 percent is paid from all producing leases to the Federal government. The Geothermal Steam Act of 1970 and the Federal Land Policy and Management Act of 1976 provide for the disbursement of 50% of the monies received from Federal leases to the State in which the leased lands are located. Additionally, California law disperses 40% of the State's receipts to the county of origin and 30% to local jurisdictions to be used to mitigate any adverse social, economic or environmental impacts associated with geothermal development on Federal land.

Consistent with the Nation's need for domestic energy sources, all of the remaining BLM public lands and mineral reserve lands in the Geysers vicinity that have been designated as suitable for geothermal development will be leased in 1982. Approximately 120,000 remain to be leased. Nearly 38,000 on public land and 38,000 of mineral reserve land.

Cooperation has been the key word at all levels in making a success story out of this abundant source of energy. Studies, financed primarily by the geothermal developers, are constantly conducted to improve technology, making development even more acceptable and economical.

Barbara Gibbons is a Public Information Officer in BLM's Ukia California District Office

Energy Boom Towns

It's Not All Bad!

Story and photos by
Evaline A. Olson



The casual observer of the landscape might find it easy to write off the sprawling high desert lands that sweep across northwestern Colorado into Utah and Wyoming. A word of advice — don't!

To the geologist, miner, and researcher, that land spells a bonanza of oil and gas, coal, oil shale and uranium. Some people talk in astronomical figures about the billions of barrels of oil that could be cooked out of the "rock that burns," shale. To towns that have tenaciously clung to life by the thread of agriculture, mining, and recreation, mineral resources promise a fulfillment of solid growth that has always seemed just beyond their grasp.

Sudden growth is no stranger to towns like Craig, Rangely, and Meeker. They were all founded in the early 1800's and now flourish at the points of northwestern Colorado's energy triangle. The region has a history of dramatic population surges and promised wealth. It all began in 1822 with the fur trade, then came mining,

railroads, cattle, and sheep. Next there was oil, coal, and shale oil wagging the finger of temptation in the early 1900's and doing it again today.

The promise of growth and fortunes from shale oil has always been a gleam in the eye of northwestern Colorado. On the eve of the 21st century, there's a difference in that promise. Billions of Federal and corporate American dollars have been poured into developing the shale resources as a cushion against the Nation's foreign oil dependence.

Just like kids everywhere who explode out of last year's clothes, so too did cities and towns of the "energy triangle" literally burst at the seams with the arrival of researchers and roustabouts, draglines and drillers. They came to wrest solutions to the energy dilemma from the ancient cliffs of shale and to lay back the fleshy red earth to reach rich, black coal beneath the surface. Much of that activity occurs on public land managed by the Bureau of Land Management, or as a result of

leases issued on the Federal mineral estate that underlies that land.

There's a great temptation among journalists, politicians and others to refer to the "boom towns," of Colorado. They could just as well be talking about the concrete shafts that pierce the Denver skyline while rotating cranes fill the air with steel and shimmering-skinned buildings of glass. When that talk turns to the energy fields, too often there's the implication of tattered tool sheds grown to towering urbania and crumbling again to decadence. A "boom town" moniker just doesn't set well with the northwestern Colorado citizenry. The headlines scream crime, inadequate housing and population unrest. No one can deny those negatives exist. The good news, if it appears at all, lies buried somewhere between the last sport story and the first obituary. Good news there is. This positive side of Colorado's energy growth needs to be told.

Some negatives may be but distorted positives. When a new chain

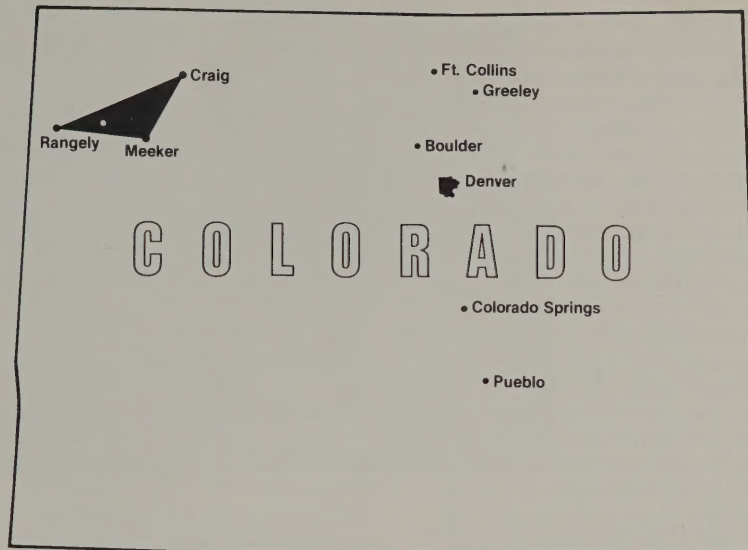
store brings to town lower prices and product availability, the interruption of nostalgia may be perceived as negative. In truth it means more affordable merchandise has come to people. Long distance treks to cities like Grand Junction or Denver are less frequent, as better medical facilities come to communities once isolated from them. Then too, there are expanded community facilities, and new housing adds to the town's tax base.

The upsurge of activity began with the energy crunch spurred by the Arab oil embargo of 1973-1974. Coal underlaid the high desert lands and was already being produced at about six million annual tons in 1972. By 1980, 18 million tons were being mined each year.

Early on, as the search for energy accelerated, so did the influx of service industries and people to staff them. Towns that before 1972 had known population changes of perhaps a dozen families a year now saw daily arrivals of scores of new families whose interests and philosophies were different from their own. Once adequate community facilities were stretched to the limits. Certainly there were negatives to population growth.

Let's not forget the positive side. The citizens are aware that growth is inevitable. The energy resources will be used. As individuals and as communities, they are tackling problems with innovation and resolve, capturing the strengths of new thinking and new money.

In Craig, voters passed bond



issues that funded a variety of services including the \$9 million school and community facility. Rangely looked at its needs and, among other actions, voted to form an Urban Renewal Authority to accommodate new housing. Meeker citizens voted approval of bond issues to fund sewer, water treatment and school facilities.

George C. Francis, Colorado State Director of the BLM, commends the Colorado State Government for having shared earmarked oil shale, oil and gas and coal royalties from Federal leases to form the Oil Shale Trust Fund and Energy Impact Fund. In addition to these funds, the Colorado severance tax becomes a part of the financial planning for energy impacted areas. Francis said, "All but State severance tax funds come to the State from royalties on its Federal minerals base and they are applied specifically to those areas that have been impacted by demographic change."

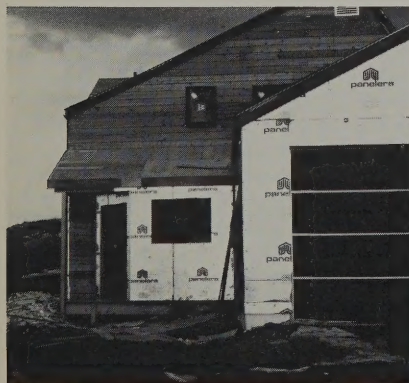
With patience, town officials have worked through a host of problems and from those trials emerged a professional approach to decision-making, better policing, higher levels of employment and improved water and sewage systems.

Marvin Pearson came to Craig in 1972 as District Manager for the BLM. He said, "I've seen Craig grow from a static little community

of about 4,000 to an expansive one where hundreds of construction workers, miners and entrepreneurs and their families came into town. Sure, we saw a lot of problems in those early days of growth that started about 1974, but we've seen more good come of it than has ever appeared in print or on the television and radio."

Mary White, President of the Business and Professional Womens' (B&PW) club and owner of the LaPlaza restaurant, came to Craig in 1980 after spending most of her adult life in Denver. She wanted to flee the big city. She'd never been to Craig but frankly chose it as a growth area where she could make a living for herself and three sons.

Mary readily agrees that the good enjoyed by the community, which of course benefits from inflowing dollars, comes as a product of a creative spirit of Americans building a new life. She laughed, "After all, that's what I came here to do. I ended up learning the restaurant business, using recipes handed down in my family for years. Along the way to that end I found a realtor, remodeling contractor and business partner all in one. We married, we're excited about our business and the community and we couldn't be more pleased with what we see in Craig." "We" includes husband, Bob White, a native of Craig, who was born in the same adobe home-



Part of a housing development, this house is a project of the students of Northwest Community College.

stead house near Sunbeam, Colorado where his mother was born in the late 1880s. If he has reservations about the energy future of Craig, he remains optimistic that the town's boom won't bust. "We've had oil fields for a long time and there's a lot of heavy trucking going on through here. That isn't going to stop. Craig is a viable marketing center and it will continue with a more solid economic base as a result of the energy development and the Colorado-Ute Power Plant with the coal mines that provide fuel for it."

Craig has survived the trauma of rapid and sometimes undisciplined growth that occurred during the height of construction, energy exploration and production, generally centered around coal. Colorado's Ute power plant placed two units in operation in 1980, each producing 400 megawatts to be transmitted across hundreds of western and southwestern miles. In 1983, the plant's third unit will be completed with capability of another 400 megawatts. Production of northwestern Colorado coal provides fuel for the plant, thanks to a long-term contract.

W.R. Grace's ColoWyo coal mine, between Craig and Meeker, had more than 400 employees in March of 1982 with no plans for lay-offs. A projected methanol plant with coal being the basic material, was deferred in 1981 because of the national economic situation. Should that plan be renewed, new growth could occur

at both Craig and Meeker.

Lee Carie, District Manager of BLM's Craig office said, "Coal production in northwestern Colorado is down. There are several reasons, not the least of them the economy. Another reason is the high cost of removing extensive overburden before the coal can be mined, and of course, there's the historic transportation isolation of northwestern Colorado." Transportation costs are now said to equal the mined cost of a ton of coal.

There is a leveling off of growth at Craig, in fact, some say a slight decline because of reduced coal production. The citizens and their city government can take a deep breath, review past growth, and enjoy the stabilization of rent, more jobs, cultural opportunities, more complete medical care, community services, and shopping facilities, while they prepare for the next surge of development that is likely to come.

There's little doubt energy will continue to play a big part in Craig's future as new technologies enhance coal production profitability and open up other energy horizons, such as the ongoing negotiations for overseas sales of coal.

David H. Smith lives in Meeker and sits on the County Planning Commission. His family goes back to the days just after the famed Meeker Massacre and he manages the family cattle ranch on land homesteaded by his grandfather.

Any competition between energy and agriculture he sees as the competition for labor, but that has its positive side. Given today's agricultural woes, many ranchers are working part time in the energy fields to support their ranches, and energy workers no longer needed in that field are coming to seek work on the ranches.

Duane Rehborg, County Development Planning Coordinator in Rio Blanco County, was involved with directing community participation by the companies. Both he and Smith are quick to point out that Northern Coal, for example, put a lot of money into the community in street construction and development of the Sage Hills residential area, one that is not a "company town" but is a part of the tax base of the community. Northern employees had a \$5,000 advantage to purchase the homes, but they were available to anyone who wanted to buy them.

No matter where explosive growth occurs, major adjustments must take place. Complexities of change come quickly into focus in communities of the West where distances are great and populations are small. Certainly "big bucks" are needed to provide larger plants for physical services like water, utilities, housing, and the myriad of necessities that produce and maintain a pleasing quality of life.

According to Rehborg, the town of Meeker, among the more recent to show evidence of energy-related growth, may well have been misinterpreted as "anti-growth" by the media when in fact its citizens were only displaying solid conservatism. That philosophy has deep roots in a determination to maintain a strong community identity, and an identification with the history of the State. The community was saying "We accept growth, but it must be planned so that it will neither destroy our identity nor dilute the pride we have in our heritage as we pass it to future generations."

Sure, some oldtimers might rather not see development at all, but as Dave Smith said, "We know it's going to happen, in fact needs to happen. America needs the

"Grasshoppers" pump oil from under the streets of Rangely.



energy resources and they happen to be here. Because we know it's inevitable, we want to plan and have it come about in the best possible way."

The measured steps to progress that Meeker residents chose is paying off. With coal production slowed to a trickle and oil shale development temporarily shut down, jobs have been lost. Northern Coal had a staff of 170 in June 1981 and that has dropped to fewer than 50. About 90 percent of those workers lived in Meeker and most of them owned homes there. The combined C_a and C_b oil shale tracts saw 700 people working in May 1981, but eight months later there were fewer than 100. Of the shale oil development employees, perhaps 25% lived in Meeker and a majority of them rented.

The slower pace of energy development in the Meeker area doesn't concern Smith. In fact, he thinks it's not all bad because, "here about a year ago," he said, "I wondered if we weren't going to get snowballed into allowing a lot of growth that wasn't very orderly, more of a reaction to the last thing that happened. That's not a very good way to organize the town."

Rehborg is eager to talk about the positive aspects of the "boom" his county is experiencing. He points to the historically agricultural nature of the county. Even in "good times" ranching in northwestern Colorado was difficult and dependent upon irrigation—not consistently available but always costly, and subject to the vicissitudes of Mother Nature. In today's less favorable economic climate, small ranchers are having a very rough time. Passing on the family ranch may not be in the game plan of the future.

The young people, nurtured to maturity where life on the ranch, for better or worse, was what they could expect, sought alternatives in the past. Most graduated from high school in towns with few jobs and certainly no career paths for long-term personal development, so they left the community and were gone for good. "We're seeing a turnaround of that trend," said Rehborg. "High school gradu-



Mary and Bob White, "We see Craig as a good place to be in business and a nice place to live, and we want folks to know there are nice things to do here."

ates in energy-rich Colorado are now surrounded by new types of work and higher technology that they knew little about in the past and certainly had no exposure." Some are motivated to pursue careers in energy-related fields rather than leave home for jobs in the city. Some are considering the option of attending a trade school or one of the junior colleges on the Western Slope to train for the burgeoning army of energy seekers and producers.

Northwestern Community College started in Rangely in 1962 as a branch of Mesa College. In 1970 the school won its own District in Rangely and now has extensions in Meeker and Craig. Mesa College is located in Grand Junction and Colorado Mountain at Glenwood Springs expanded its campus to Steamboat Springs. All are becoming involved in teaching petroleum technology. In addition, some of the companies working in the energy field are opening up trade-oriented types of jobs as trainee positions.

The slow-down in development at the C_a and C_b tracts and reductions in coal production, while having certain economic impacts on the growing communities, still has its bright side. It buys time for training local young people to become corporate employees who will contribute over the long haul to a town's economic mainstream.

Highway 64 slopes westward to Rangely. It follows along and above the verdant river bottom pastures

where sheep and cattle graze until spring. The agricultural scene gives way to more desert-like lands of sagebrush and pinyon juniper. First one and then increasing numbers of oil well "grasshoppers" pump oil with a measured precision and you're at the Rangely oil fields.

Near the town of Rangely, oil springs were found in 1892 along what they named Oil Creek. In 1902 the Poole Well was brought in and an oil "boom" ensued. When producers discovered the reserves lay so deep it just wasn't worth the effort or cost to produce, that first boom paled. Until the 1940s Rangely's population hovered between 100 and 200. Other wells had been located and sustained modest production until World War II when the demand for oil skyrocketed.

That's when the Rangely oil field (the largest oil-producing area in the Rocky Mountain region) was discovered and it soon became clear the town was surrounded by oil and gas fields as well as coal and oil-bearing shale.

Arlene Sinclair, who came from Denver with husband Jim in 1948 because of work in the oil fields, said, "All you have to do is look at the working pumps in and around town to know that Rangely exists because of oil."

The realities of oil production are clearly visible. The skepticism of the future of oil shale is a fragile thread woven within the conversation, but the star of coal production burns brightly. Long-time

residents remember the coal production that used to come from the original Deserado mine, about eight miles out of town.

A relative newcomer, Ann McLachlan Jones' excitement punctuates her enthusiasm for the future of the new Deserado Mine being built by Western Fuels-Utah. Ann came to Rangely, a graduate from Michigan Central University and worked at Northwestern Community College for two years. Western Fuels then approached her to become their Community Development Director.

Western Fuels-Utah will provide coal from the Deserado Mine to fuel the Deseret Generation and Transmission Bonanza Plant Unit 1, near Bonanza, Utah. Western Fuels owns 40 surface acres at the mine site and has leases for the mine-waste disposal area which will cover 1,760 acres of BLM-managed land. Other BLM permits granted to the company total 1,148 acres for rights-of-way for roads, the conveyor system, railroad load-out facility, water wells, etc. Coal reserves under Federal leases, formerly held by Moon Lake Electric Association, were assigned to Western Fuels and total 3,070 acres. Lease rights for Federal prospecting permits will add another 3,371 acres of coal.

During the period of construction there will be an estimated 335 workers at the mine site, add to that a future influx of 500 construction workers who will build 38 miles of electric railroad to haul coal from the mine to the Utah-based Deseret plant.

The projected life of the mine is 40 years and will have a planned permanent work force of 373. The town of Rangely will bear the brunt of the immediate impacts of population growth, but the mine's tax base is in the county. The changing times have brought both sophistication and professionalism to town and county management throughout the region and Rio Blanco County provides a classic example. Together, county and town officials totaled up the cost of providing services and housing for a projected population of 2,100 (nearly double the town's present size), then together they negoti-

ated for and won \$17 million in up-front and projected "boom town" aid from Western Fuels.

Of the lengthy negotiations, Rangely's Mayor, Peggy Rector said, "It was a challenging and exciting experience. I'm sure that we as citizens and local government officials learned a great deal about the complexities of the business of massive energy development.

Rangely was faced with immediate financial needs to provide services, to be sure, but it also needed room to grow. The community is virtually landlocked since 44 percent of the land surrounding it is public land managed by BLM. BLM State Director Francis made a decision in August 1981 that will allow the town of Rangely to expand its boundaries by 106 acres. This is in keeping with BLM's desire to be a good neighbor and Secretary of Interior James Watt's policy of assisting local governments. In issuing the decision Francis said, "I have invited the Town of Rangely to submit a written order to purchase the land at the appraised fair market value of \$4,500 per acre for 80 acres of residential property and \$6,000 per acre for 26 acres of commercial property."

The offer to sell was quickly accepted by Rangely's City Council and the offer to purchase was made. Litigation by a group of Rangely property owners threatened to stall the purchase of land from BLM with plaintiffs arguing that there is adequate private land for expansion, even though at considerably higher prices.

On April 2, BLM issued to the town of Rangely a patent for 106.87 acres of public land which will allow for orderly expansion of the landlocked community. The transaction finalizes the 1981 BLM decision to sell the land. On accepting the patent, Mayor Rector said, "This positive step will assist the developers of the Deserado Mine to more suitably implement their impact mitigation agreement which provides for construction of housing at a mix of 60 percent single family dwellings, 20 percent multi-family dwellings and 15 percent mobile

homes. Right now, we have a zero vacancy rate. A lot of people in the county are living in recreational vehicles because we do not have the housing."

Even the heavy brown clay that came with an early spring thaw couldn't mire down Mayor Rector's enthusiasm. She has a very positive view of Western Fuels' management and the agreement that was implemented within 30 days following the ground breaking at Deserado. She looks forward to the town's improvements of streets and drainage, expanded water system, revamping of existing utilities, a human services council, all occurring according to the blue print for progress outlined in the mitigation agreement and all carefully monitored.

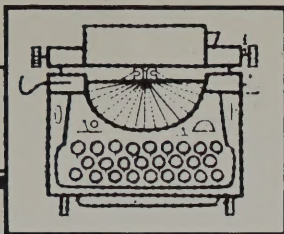
The future for Rangely does indeed look very positive.

Companies are keenly aware of the urgency to be a part of providing accepted lifestyles for the "imported" employees. Not only do they recognize the role it plays in attracting quality employees, but the longer term benefit in reducing occupational turnover.

The Colorado energy "boom" is on everyone's lips. Its euphoria and its frustrations ricochet among the skyscrapers of Denver where 82,000 out of 811,300 jobs (a healthy 10%) are related to energy. It whippers or wails with the winds of the sprawling high desert lands that sweep across northwestern Colorado and into Utah and Wyoming.

To quote from a timely BLM publication by Dr. Frederick J. Athearn, BLM Historian, *An Isolated Empire*—"The northwestern corner (of Colorado), today, is showing signs of fulfilling the dreams that it harbored for over a hundred years. All the things that were needed to foster growth and development are finally in place, and with energy a national priority, there is little reason to believe that this region will not grow and prosper for many years."

Evaline Olson is a Public Information Specialist in BLM's Colorado State Office



News Highlights

Rights-of-Way Regs Revised

Rights-of-way regulations have been revised by the Department of the Interior to make them easier to understand and to simplify some requirements.

Similar revisions for oil and gas rights-of-way and general rights-of-way have been adopted. The amendments reduce the amount of information an applicant has to provide and allow use of a standard Federal right-of-way application form.

The regulations eliminate the former requirement for advance agreements with the Department of Energy for the transmission of Federal power as a condition for issuance of rights-of-way grants.

New Recreation Trail

Secretary of the Interior James Watt has signed a certificate designating the Mineral Ridge Trail near Coeur d'Alene, Idaho as a National Recreation Trail. With this addition, BLM now has 12 such trails, covering 109 miles in six States as part of the National Trails System.

Geothermal Developments

A geothermal operated electrical generator went into production near Cedar City, Utah last winter making the Roosevelt Hot Springs one of only four producing geothermal fields in the U.S.

Several entities are involved in the Roosevelt Hot Springs project which uses

geothermal energy from Federal leases. Utah Power and Light is constructing the generating facilities and will market the power that is produced. The steam is provided by Phillips Petroleum Company. The well-head turbine generator was constructed by Biphase Energy Systems and Electric Power Research Institute is sponsoring the early testing of this special well-head turbine concept.

Utah Power and Light is working on a 20,000 kilowatt generating plant at the site. It is scheduled to begin operation in the spring of 1984. As the resource is developed with more geothermal wells, Utah Power and Light plans to construct additional power plants.

Cultural Resources Protected

The Bureau of Land Management and the Minerals Management Service have set up cooperative procedures for the protection of cultural resources during mineral exploration and development on the Outer Continental Shelf (OCS). The agreement spells out responsibilities in all phases of the OCS program for identification and mitigation of effects on prehistoric sites and shipwrecks.

Alaskan Minerals Report

Three strategic minerals found in Alaska--cobalt, chromite, and the platinum-group metals--are the subject of a new report from the Interior Department's

Bureau of Mines.

The report is the first in a series of annual assessments of the potential for strategic minerals in Alaska, where most of the areas considered promising for new discoveries remain unexplored.

Known deposits of the three metals are described, and reserves estimated. A map displays the locations of the deposits, and a table characterizes them geologically and lists sites recommended for further evaluation.

The Bureau of Mines Information Circular 8869, "Critical and Strategic Minerals in Alaska: Cobalt, the Platinum-Group Metals, and Chromite," may be purchased for \$2.00 each from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Please specify title and Stock No. 024-004-02088-1.

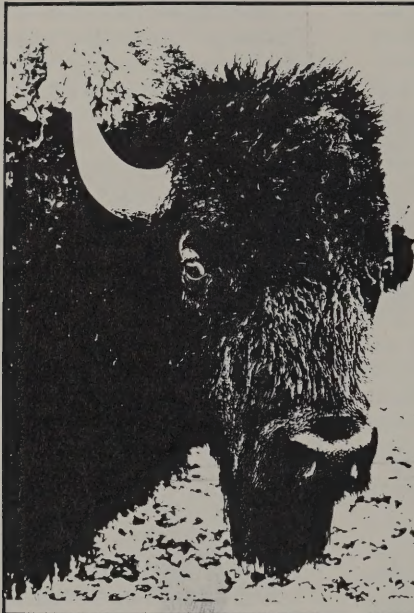
OCS Leasing Program

Selection of a proposed final offshore five-year oil and gas leasing program designed to accelerate development of the Outer Continental Shelf under stringent environmental safeguards was announced in May by Interior Secretary James Watt.

In announcing the program Secretary Watt said, "The program will make more acreage available for leasing, will cut substantially the time now required to start leasing in promising frontier areas, especially off the coast of Alaska, and will use the market mechanism rather than government decisions to select areas for lease and exploration."



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